

REMARKS

Claims 1-17 are pending and under consideration in the above-identified application.

In the Office Action of October 16, 2003, claims 1-17 were rejected.

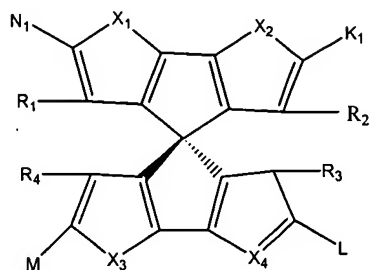
With this Amendment, claims 1-4, 6-7, 9-12, and 15-16 were amended for correcting grammar. No new matter has been added.

I. 35 U.S.C. § 103 Obviousness Rejection of Claims

Claims 1-17 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Salbeck et al. (U.S. Patent No. 6,211,369) in view of Matsuo et al. (U.S. Patent No. 5,885,498). Applicants respectfully traverse this rejection.

The present invention is directed to an organic electroluminescent device capable of stable blue emission with high color purity very close to blue color based on the NTSC standard and sRGB for blue chromaticity (0.15, 0.06) (see page 8, lines 2-8). Applicants discovered that blue emission with high purity is achieved by the configuration of an organic electroluminescent device having a luminescent layer made of claimed spiro compounds or its derivatives and the hole transporting layer consisting essentially of triphenylamine tetramer. The claims are drawn to the structural formula of the luminescent layer made of spiro compounds and the hole transportation layer made of triphenylamine tetramer, which giving rise to unexpected color purity.

Salbeck et al. (U.S. Patent No. 6,211,369) only teaches the composition of spiro compounds as charge transport materials. In Sailbeck et al., the following structure is presented:



where

X₁, X₂, X₃, X₄ are identical or different and are -S, -O, -NR₅, -CR₅=N-, -CR₅=CH- with the proviso that at least one of the groups X₁-4 is different from -CR₅=CH-.

The molecular structure of spiro compounds in Salbeck et al. is different from the structural formula of the present invention; the ring of spiro compound in Salbeck has five carbons instead of the six carbons in the present invention. Therefore, Salbeck et al. does not disclose or suggest the structural formula of spiro compounds or its derivatives of claims in the present application.

Matsuo et al. (U.S. Patent No. 5,885,498) teaches an organic light emitting device made by laminating a positive electrode, a hole transporting layer, and electron transporting layer including triphenylamine tetramer as the major component and 5, 6, 11, 12-tetraphenylnaphthacene as pigment compound which is added to the hole transporting layer. The hole transporting layer acts as a light transmitting layer and suppresses reduction of luminance of the light.

In contrast, the present invention is directed to an organic electroluminescent device including a luminescent layer made of spiro compounds or its derivatives, and a hole transporting layer consisting essentially of triphenylamine tetramer. Additionally, in the present

invention, the luminescent layer and the hole transporting layer are separately configured contrast to Matsuo et al.

None of the cited references suggests any motivation for, or the desirability of, combining a spiro structural formula and a triphenylamine tetramer of the hole transport layer, as claimed. As such, it would not have been obvious to an artisan of ordinary skill in the art to combine the teachings of the cited references to have an organic electroluminescent device having the a luminescent layer made of spiro compounds or its derivatives in the claims 1-17 and the hole transporting layer consisting essentially of a triphenylamine tetramer in the claims 1-17. Accordingly, Applicants respectfully request withdrawal of this rejection.

II. Conclusion

In view of the above amendments and remarks, Applicants submit that all claims are clearly allowable over the cited prior art, and respectfully request early and favorable notification to that effect.

Respectfully submitted,

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